

INCIDENCE OF ANEMIA BASED ON HAEMOGLOBIN LEVELS IN CHILDREN 2-12 YEARS OF AGED IN NOBEL MEDICAL COLLEGE TEACHING HOSPITAL, BIRATNAGAR, NEPAL

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Abstract:

Haemoglobin levels were used to estimate the incidence of anaemia in children 2-12 years old in the population of Biratnagar, Morang Dist., Nepal. who were attending Nobel Medical College & teaching hospital. Out of 5063 subjects, 634 children's were selectively diagnosed as anaemia. Among the 2406 children's aged 2-6 years 5.4% were diagnosed with mild anaemia, 2.7% moderate anaemia and 1.7% severe anaemia (WHO definition) of 2657 children's aged 7-12 years, 10.2% were diagnosed with mild anaemia, 3.1% moderate anaemia and 1.3% severe anaemia.

Kew Words: Incidence, Prevalence, Anaemia

Introduction:

Anaemia is the commonest problem in the growing age group in developing countries¹. When iron deficiency is sufficient severe, Hb concentration in the blood decreases, leading to iron deficiency anaemia (IDA), which has negative health consequences, especially in children³·adolescents⁴.

According to the latest data more than 3 billion people throughout the world have some form of anaemia ranging from deficiency in iron resources without symptoms of anaemia to iron deficiency anaemia.⁵ Iron deficiency in infancy and adolescence causes mental retardation and damages the immune system, predisposing children to a wide range of disorder.^{6,7} Different studies in Egypt⁸, India⁹, Thailand¹⁰ and the United states¹¹ have shown that iron-deficiency anaemia in children under 5 years old and primary school students is accompanied by psychomotor retardation, low intelligence and decreased learning capability. A study in Thailand has shown that the effects of anaemia on intelligence couldn't be compensated for¹⁰ one of the

most dangerous consequences is the higher risk of poisoning with heavy elements, since the absorption of these elements increases in cases of iron deficiency.¹² Recently it has been reported that preschool children have the highest prevalence of anaemia, nearly 50% across developing countries, compared with pregnant and non-pregnant women¹³

Method and methodology:

This retrospective study was conducted in Nobel Medical College & Teaching Hospital (NMCTH) with aim to serve Nepalese people. A sample size of 5063 subjects who were investigated for estimation Hb levels by Cyanmethaemoglobin method both aged 2-6 years and 7-12 years children. As anaemia is classified into three degree according to WHO: mild, moderate and severe. Hb cut-off values of anaemia for children <6 years were mild 10.0-10.9 g/dl, moderate 9.0-9.9 g/dl and severe < 9.0 g/dl. Hb cut- off of anaemia for children 6-12 years old were: mild 11.0-11.9 g/dl, moderate 10.0-10.9 g/dl and severe < 10.0 g/dl¹⁴

Result:

Table:1: shows that 634 subjects were diagnosed as anaemia out of a total population of 5063 including both the aged 2-6 years and 7-12 years childrens in our study. The total percentage of anaemia was 24.4% comparatively among them, 241 and 393 were 2-6 years and 7-12 years children respectively. The incidence of anemia was 9.8% in 2-6 years and 14.6% in 7-12 years

children. The overall incidence of anemia was significantly higher 14.6% aged 7-12 years of children.

Table:2 represents the status of anaemia based on Hb levels measured in 2-6 years old children, severe anaemia was seen in 1.7%, moderate anaemia was present in 2.7% and mild anemia was present in 5.4% of children . Overall incidence of anemia was 9.8%.

Table 1: Incidence of anemia in both 2-6 and 7-12 years children

Total No of Investigated Patients	Total Anaemic Patients	% of Anaemic Patients
5063	634	24.4%

Table 2: Distribution of anaemia based on the Hb levels in children aged 2-6 years and 7-12 years of Nobel Medical College and teaching hospital, Biratnagar, Morang district of Nepal

Age group/ severity of anemia	No of patients	%	Total %	
	*2-6 years			
	Severe	43	1.7	9.8
	Moderate	66	2.7	
	Mild	132	5.4	
	Total	2406	100.0	
	**6-12 years			
	Severe	36	1.3	14.6
	Moderate	84	3.1	
	Mild	273	10.2	
	Total	2657	100.0	

Table: 2 also depicts the status of anemia based on haemoglobin(Hb) levels,in children 7-12 years old. Severe anemia was seen in 1.3%, moderate anemia was present in 3.1%,

Discussion:

Our retrospective study one of the hospital based study. The study shows that anaemia should be considered as a major health problem in Biratnagar, dist., Morang, Nepal.

and mild anemia was present in 10.2% of children .The overall incidence of anaemia 14.6% .So it is significantly higher than the 2-6 years of children

In total 9.8% of 2-6 year old children and 14.6% of 7-12 year-old children suffered from anaemia (Hbs 11.0 g/dl). According to the WHO classification if 5%-25% of the population have anaemia or abnormal Hb , the degree of population anaemia is graded

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mild⁷

A study in the United states (US) in 1976-80 showed the rate of anaemia to be around 6% in 2-6 year-old children.¹⁵ Anaemia is present in 27% of 1-6 year- old children in the Philippines, 27%-44% in 3-5 year- old children in India and 24% in 2-5 year- old children in Romania.¹⁶ Another report showed that Asian children suffer from micronutrient deficiencies, especially iron deficiency anaemia and the prevalence of iodine- deficiency anaemia was 40-50% in preschool and primary- school children.¹⁷

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